

VCO Lab 3

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CTI1301 – VCO – C202512 Section 01

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Cold Migration

The screenshot displays the Proxmox Virtual Environment (VE) interface. On the left, the 'Pool View' shows a hierarchy: Datacenter > 2512-CT11301-rjpottter > 139 (rjpottter-Server2025) > 140 (rjpottter-Rocky) > 323 (rjpottter-Ubuntu). The main panel shows the details for 'Virtual Machine 323 (rjpottter-Ubuntu) on node 'node102''. A 'Task viewer' window is open, titled 'Task viewer: VM 323 - Migrate (node101 ----> node102)'. It shows the migration progress and status.

Task viewer: VM 323 - Migrate (node101 ----> node102)

Output | **Status**

Stop | Download

2025-12-02 06:33:58 use dedicated network address for sending migration traffic (10.99.99.102)
2025-12-02 06:33:59 starting migration of VM 323 to node 'node102' (10.99.99.102)
2025-12-02 06:34:00 migration finished successfully (duration 00:00:02)
TASK OK

Tasks | Cluster log

Start Time ↓	End Time	Node	User name	Description	Status
Dec 02 06:33:54	Dec 02 06:34:00	node101	rjpottter@FS-SSO	VM 323 - Migrate	OK
Dec 02 06:30:20	Dec 02 06:30:24	node101	rjpottter@FS-SSO	VM 140 - Shutdown	OK
Dec 02 06:23:44	Dec 02 06:30:13	node101	rjpottter@FS-SSO	VM/CT 140 - Console	OK
Dec 02 06:23:40	Dec 02 06:23:42	node101	rjpottter@FS-SSO	VM 140 - Start	OK
Dec 02 06:23:37	Dec 02 06:23:48	node101	rjpottter@FS-SSO	VM 139 - Shutdown	OK

Live Migration

The screenshot displays the Proxmox Virtual Environment (VE) interface during a live migration of VM 102 from node102 to node101.

Terminal Window (Left): Shows the output of a continuous ping command from 8.8.8.8 to the host. The results indicate successful connectivity with varying response times.

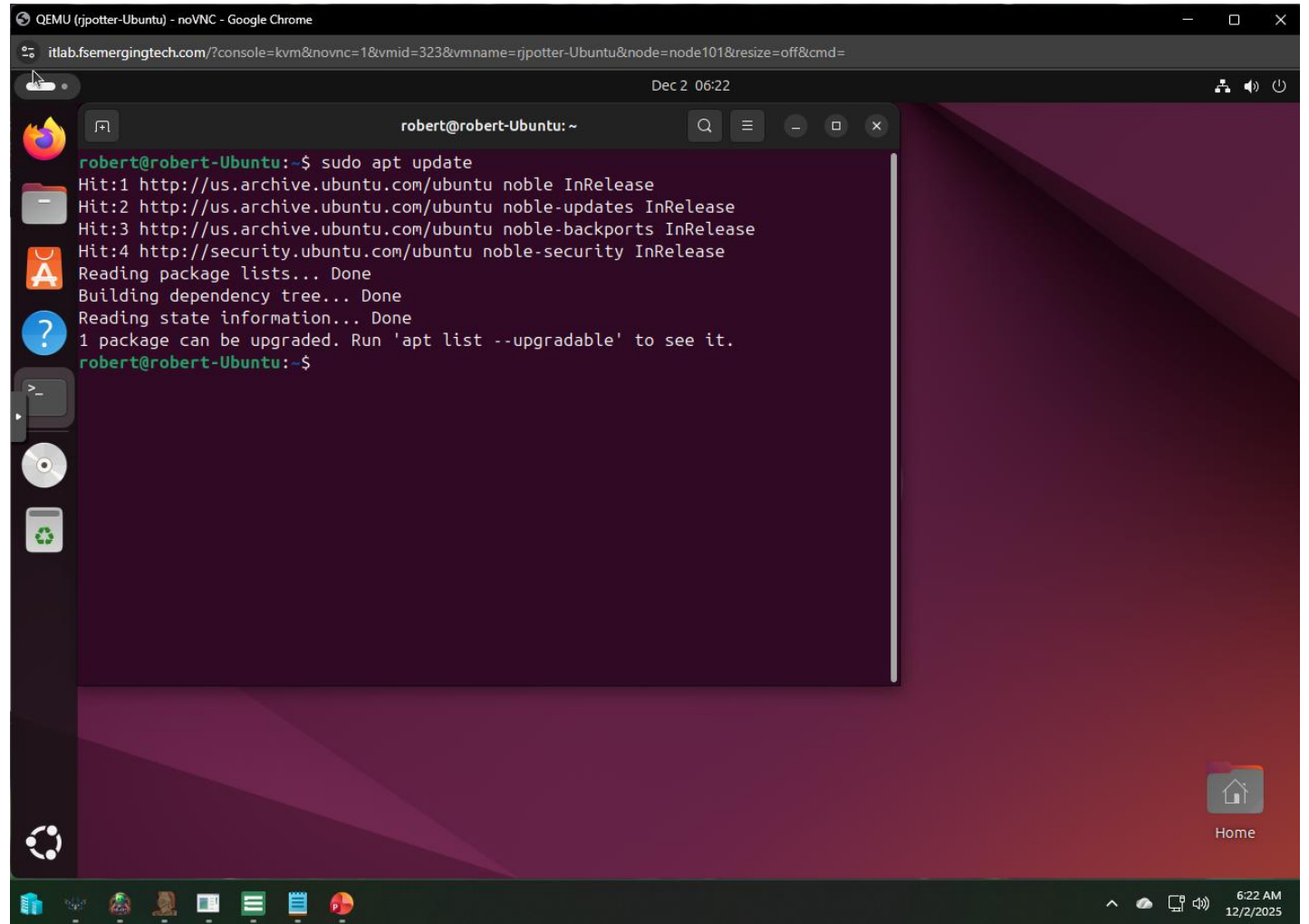
```
64 bytes from 8.8.8.8: icmp_seq=26 ttl=112 time=8.00 ms
64 bytes from 8.8.8.8: icmp_seq=27 ttl=112 time=8.08 ms
64 bytes from 8.8.8.8: icmp_seq=28 ttl=112 time=7.49 ms
64 bytes from 8.8.8.8: icmp_seq=29 ttl=112 time=7.85 ms
64 bytes from 8.8.8.8: icmp_seq=30 ttl=112 time=8.11 ms
64 bytes from 8.8.8.8: icmp_seq=31 ttl=112 time=7.71 ms
64 bytes from 8.8.8.8: icmp_seq=32 ttl=112 time=8.26 ms
64 bytes from 8.8.8.8: icmp_seq=33 ttl=112 time=7.66 ms
64 bytes from 8.8.8.8: icmp_seq=34 ttl=112 time=7.64 ms
64 bytes from 8.8.8.8: icmp_seq=35 ttl=112 time=8.12 ms
64 bytes from 8.8.8.8: icmp_seq=36 ttl=112 time=8.15 ms
64 bytes from 8.8.8.8: icmp_seq=37 ttl=112 time=7.47 ms
64 bytes from 8.8.8.8: icmp_seq=38 ttl=112 time=7.66 ms
64 bytes from 8.8.8.8: icmp_seq=39 ttl=112 time=8.26 ms
64 bytes from 8.8.8.8: icmp_seq=40 ttl=112 time=7.70 ms
64 bytes from 8.8.8.8: icmp_seq=41 ttl=112 time=7.51 ms
64 bytes from 8.8.8.8: icmp_seq=42 ttl=112 time=7.57 ms
64 bytes from 8.8.8.8: icmp_seq=43 ttl=112 time=7.99 ms
64 bytes from 8.8.8.8: icmp_seq=44 ttl=112 time=8.03 ms
64 bytes from 8.8.8.8: icmp_seq=45 ttl=112 time=7.69 ms
64 bytes from 8.8.8.8: icmp_seq=46 ttl=112 time=7.66 ms
64 bytes from 8.8.8.8: icmp_seq=47 ttl=112 time=8.21 ms
64 bytes from 8.8.8.8: icmp_seq=48 ttl=112 time=7.65 ms
```

Proxmox GUI (Right): The 'Task log' window for VM 102 migration is open, showing a detailed log of the migration process. The log includes the start time, the source node (node102), the target node (node101), and the user (root@pve). The migration status is 'OK'.

Task Log Details:

Start Time	End Time	Node	User name	Description	Status
Dec 02 06:37:16	Dec 02 06:37:16	node101	root@pve	VMCT 102 - Console	OK
Dec 02 06:36:52	Dec 02 06:37:17	node102	root@pve	VM 102 - Migrate	OK
Dec 02 06:36:48	Dec 02 06:37:15	node102	root@pve	VMCT 102 - Console	OK
Dec 02 06:36:48	Dec 02 06:36:48	node102	root@pve	VM 102 - Start	OK
Dec 02 06:36:48	Dec 02 06:36:48	node101	root@pve	VM 102 - Migrate	OK

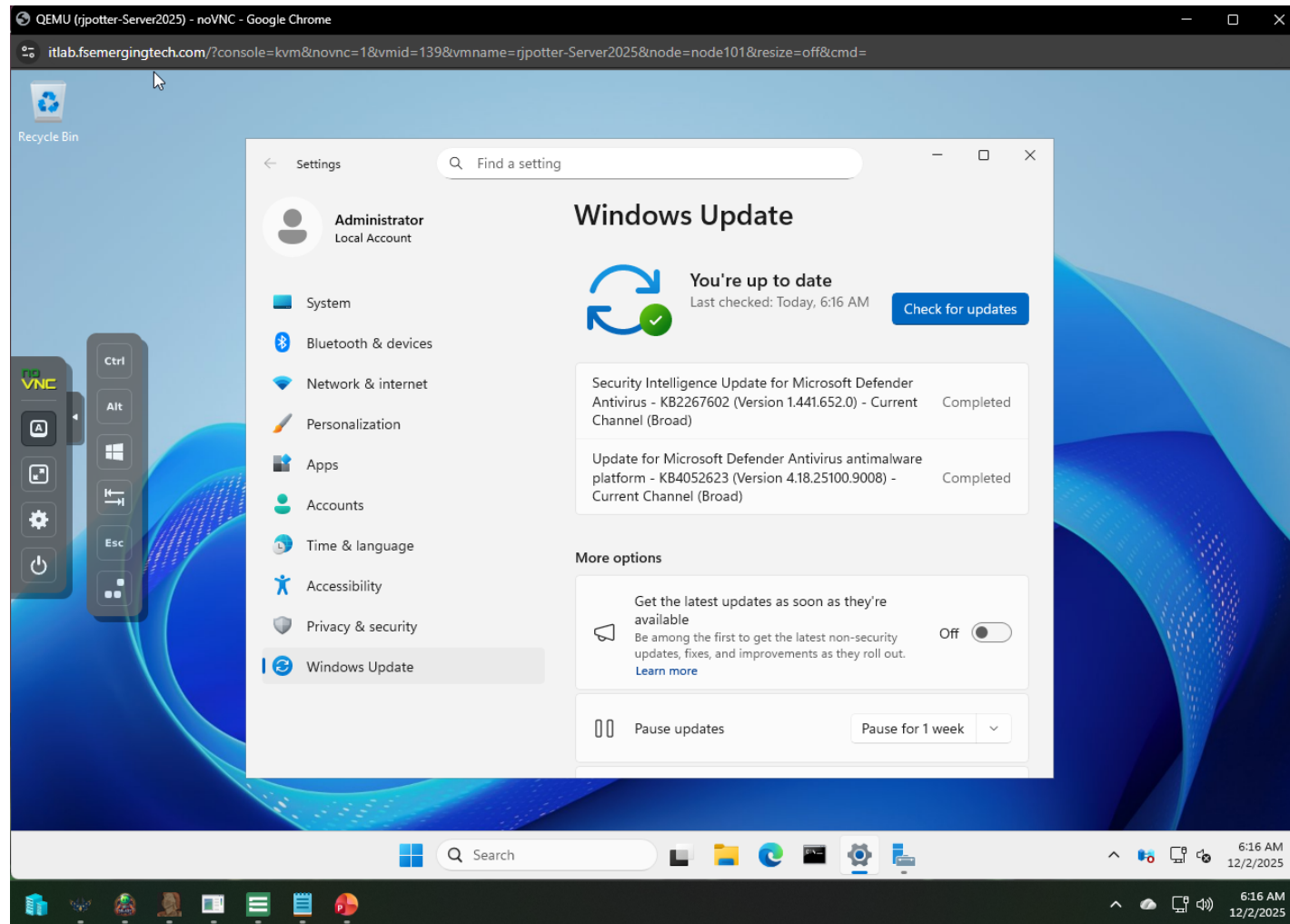
Ubuntu Update



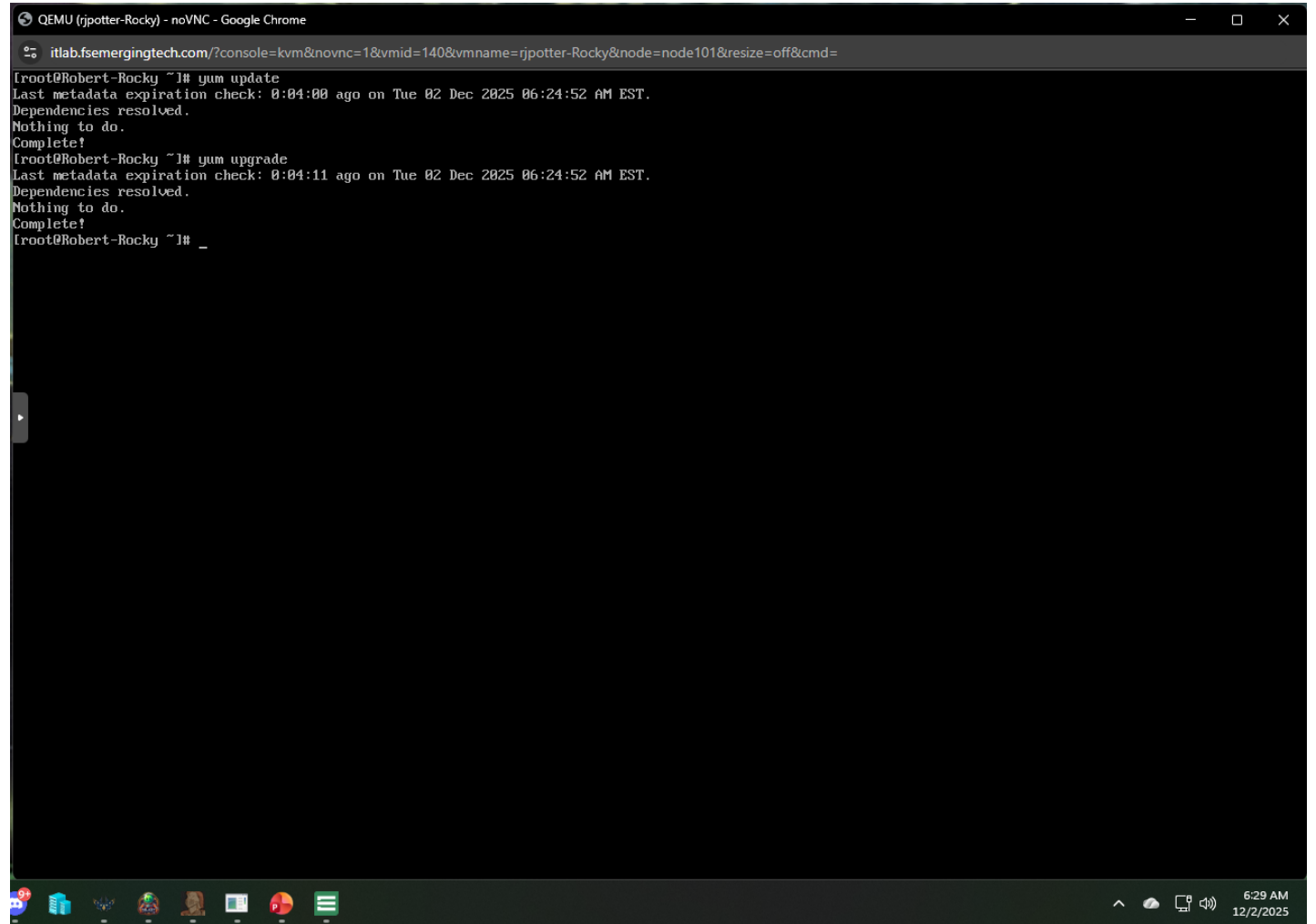
The screenshot shows a QEMU virtual machine window titled "QEMU (jipotter-Ubuntu) - noVNC - Google Chrome". The browser address bar shows the URL "itlab.fsemergingtech.com/?console=kvm&novnc=1&vmid=3238&vmname=jipotter-Ubuntu&node=node1018&resize=off&cmd=". The virtual machine's desktop environment is Ubuntu, with a dark purple background and a sidebar on the left containing icons for applications, a file manager, a terminal, a disc, a trash, and a network icon. A terminal window is open, displaying the command "sudo apt update" and its output. The output shows four hits for updates from the archive.ubuntu.com and security.ubuntu.com, followed by a message indicating that one package can be upgraded. The system clock in the bottom right corner shows "6:22 AM 12/2/2025".

```
robot@robot-Ubuntu: ~  
robot@robot-Ubuntu:~$ sudo apt update  
Hit:1 http://us.archive.ubuntu.com/ubuntu noble InRelease  
Hit:2 http://us.archive.ubuntu.com/ubuntu noble-updates InRelease  
Hit:3 http://us.archive.ubuntu.com/ubuntu noble-backports InRelease  
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
1 package can be upgraded. Run 'apt list --upgradable' to see it.  
robot@robot-Ubuntu:~$
```

Windows server 2025 Update



Rocky Updates



The screenshot shows a QEMU terminal window titled "QEMU (rjpotter-Rocky) - noVNC - Google Chrome". The address bar displays the URL: itlab.fsemergingtech.com/?console=kvm&novnc=1&vmid=140&vmname=rjpotter-Rocky&node=node101&resize=off&cmd=. The terminal output shows the following commands and their results:

```
[root@Robert-Rocky ~]# yum update
Last metadata expiration check: 0:04:00 ago on Tue 02 Dec 2025 06:24:52 AM EST.
Dependencies resolved.
Nothing to do.
Complete!

[root@Robert-Rocky ~]# yum upgrade
Last metadata expiration check: 0:04:11 ago on Tue 02 Dec 2025 06:24:52 AM EST.
Dependencies resolved.
Nothing to do.
Complete!

[root@Robert-Rocky ~]# _
```

The terminal window has a dark background with light gray text. A vertical scrollbar is visible on the left side of the terminal area. At the bottom of the window, there is a taskbar with several application icons and a system tray showing the time as 6:29 AM on 12/2/2025.

Ubuntu Backup

node105 - Proxmox Virtual Env

itlab.fsemergingtech.com/#v1:0:=qemu%2F3234:::21:

Virtual Lab Virtual Environment 8.3.3

Virtual Machine 323 (rjpotter-Ubuntu) on node 'node101'

Task viewer: VM/CT 323 - Backup

Output Status

INFO: 35% (5.7 GiB of 16.0 GiB) in 6s, read: 148.6 MiB/s, write: 136.6 MiB/s
INFO: 40% (6.5 GiB of 16.0 GiB) in 9s, read: 304.5 MiB/s, write: 175.3 MiB/s
INFO: 43% (7.0 GiB of 16.0 GiB) in 12s, read: 148.6 MiB/s, write: 136.0 MiB/s
INFO: 64% (10.3 GiB of 16.0 GiB) in 15s, read: 1.1 GiB/s, write: 136.3 MiB/s
INFO: 71% (11.4 GiB of 16.0 GiB) in 18s, read: 379.4 MiB/s, write: 333.6 MiB/s
INFO: 77% (12.3 GiB of 16.0 GiB) in 21s, read: 315.4 MiB/s, write: 271.4 MiB/s
INFO: 80% (12.9 GiB of 16.0 GiB) in 24s, read: 198.2 MiB/s, write: 197.7 MiB/s
INFO: 83% (13.4 GiB of 16.0 GiB) in 27s, read: 170.4 MiB/s, write: 170.1 MiB/s
INFO: 87% (14.0 GiB of 16.0 GiB) in 30s, read: 193.3 MiB/s, write: 192.1 MiB/s
INFO: 90% (14.5 GiB of 16.0 GiB) in 33s, read: 193.3 MiB/s, write: 181.9 MiB/s
INFO: 93% (15.0 GiB of 16.0 GiB) in 36s, read: 139.0 MiB/s, write: 138.6 MiB/s
INFO: 96% (15.4 GiB of 16.0 GiB) in 39s, read: 139.0 MiB/s, write: 137.9 MiB/s
INFO: 98% (15.8 GiB of 16.0 GiB) in 42s, read: 134.1 MiB/s, write: 131.3 MiB/s
INFO: 100% (16.0 GiB of 16.0 GiB) in 44s, read: 126.4 MiB/s, write: 125.2 MiB/s
INFO: backup is sparse: 8.32 GiB (52%) total zero data
INFO: transferred 16.00 GiB in 44 seconds (372.4 MiB/s)
INFO: stopping kvm after backup task
INFO: archive file size: 4.07GB
INFO: adding notes to backup
INFO: Finished Backup of VM 323 (00:00:49)
INFO: Backup finished at 2025-12-02 06:40:51
INFO: Backup job finished successfully
TASK OK

Start Time ↓	End Time	Node	User name	Description	Status
Dec 02 06:40:02	Dec 02 06:40:51	node101	rjpotter@FS-SSO	VM/CT 323 - Backup	OK
Dec 02 06:39:01	Dec 02 06:39:07	node101	rjpotter@FS-SSO	VM 323 - Shutdown	OK
Dec 02 06:37:16	Dec 02 06:39:06	node101	rjpotter@FS-SSO	VM/CT 323 - Console	OK
Dec 02 06:36:52	Dec 02 06:37:17	node102	rjpotter@FS-SSO	VM 323 - Migrate	OK
Dec 02 06:35:48	Dec 02 06:37:15	node102	rjpotter@FS-SSO	VM/CT 323 - Console	OK

6:40 AM
12/2/2025

Windows 2025 Backup

node105 - Proxmox Virtual Envi

itlab.fsmergingtech.com/#v1:0:=qemu%2F139:4::::21:

Virtual Lab Virtual Environment 8.3.2

Pool View

Virtual Machine 139 (rjpotter-Server2025) on node 'node101'

Summary Console Hardware Cloud-Init

Task viewer: VM/CT 139 - Backup

Output Status

Stop Download

INFO: 56% (14.7 GiB of 26.0 GiB) in 1m 13s, read: 203.0 MiB/s, write: 198.3 MiB/s
INFO: 59% (15.4 GiB of 26.0 GiB) in 1m 16s, read: 239.2 MiB/s, write: 239.1 MiB/s
INFO: 61% (16.0 GiB of 26.0 GiB) in 1m 19s, read: 181.2 MiB/s, write: 174.0 MiB/s
INFO: 66% (17.3 GiB of 26.0 GiB) in 1m 22s, read: 438.5 MiB/s, write: 164.1 MiB/s
INFO: 68% (17.7 GiB of 26.0 GiB) in 1m 25s, read: 158.4 MiB/s, write: 157.7 MiB/s
INFO: 70% (18.2 GiB of 26.0 GiB) in 1m 28s, read: 171.6 MiB/s, write: 171.2 MiB/s
INFO: 71% (18.7 GiB of 26.0 GiB) in 1m 31s, read: 152.2 MiB/s, write: 151.8 MiB/s
INFO: 73% (19.1 GiB of 26.0 GiB) in 1m 34s, read: 155.5 MiB/s, write: 146.6 MiB/s
INFO: 75% (19.6 GiB of 26.0 GiB) in 1m 37s, read: 150.2 MiB/s, write: 135.8 MiB/s
INFO: 78% (20.3 GiB of 26.0 GiB) in 1m 40s, read: 253.8 MiB/s, write: 205.2 MiB/s
INFO: 81% (21.1 GiB of 26.0 GiB) in 1m 43s, read: 277.9 MiB/s, write: 265.0 MiB/s
INFO: 82% (21.5 GiB of 26.0 GiB) in 1m 46s, read: 113.6 MiB/s, write: 113.6 MiB/s
INFO: 99% (25.9 GiB of 26.0 GiB) in 1m 49s, read: 1.5 GiB/s, write: 272.2 MiB/s
INFO: 100% (26.0 GiB of 26.0 GiB) in 1m 50s, read: 89.9 MiB/s, write: 87.0 MiB/s
INFO: backup is sparse: 7.10 GiB (27%) total zero data
INFO: transferred 26.00 GiB in 110 seconds (242.1 MiB/s)
INFO: stopping kvm after backup task
INFO: archive file size: 14.35GB
INFO: adding notes to backup
INFO: Finished Backup of VM 139 (00:01:53)
INFO: Backup finished at 2025-12-02 06:43:39
INFO: Backup job finished successfully
TASK OK

Tasks Cluster log

Start Time ↓	End Time	Node	User name	Description	Status
Dec 02 06:41:46	Dec 02 06:43:39	node101	rjpotter@FS-SSO	VM/CT 139 - Backup	OK
Dec 02 06:40:02	Dec 02 06:40:51	node101	rjpotter@FS-SSO	VM/CT 323 - Backup	OK
Dec 02 06:39:01	Dec 02 06:39:07	node101	rjpotter@FS-SSO	VM 323 - Shutdown	OK
Dec 02 06:37:16	Dec 02 06:39:06	node101	rjpotter@FS-SSO	VM/CT 323 - Console	OK
Dec 02 06:36:52	Dec 02 06:37:17	node102	rjpotter@FS-SSO	VM 323 - Migrate	OK

6:43 AM
12/2/2025

Rocky Backup

node105 - Proxmox Virtual Env

itlab.fsemergingtech.com/#v1:0:=qemu%2F140:4::::21::

Virtual Lab Virtual Environment 8.3.2

Documentation Create VM Create CT rjpotter@FS-SSO

Pool View

Virtual Machine 140 (rjpotter-Rocky) on node 'node101' No Tags Start Shutdown Migrate Console More Help

Summary Backup now Restore Show Configuration Edit Notes Change Protection Remove Storage: backups

Console Hardware Cloud-Init

Task viewer: VM/CT 140 - Backup

Output Status

Stop Download

INFO: Backup started at 2025-12-02 06:44:24
INFO: status = stopped
INFO: backup mode: stop
INFO: ionice priority: 7
INFO: VM Name: rjpotter-Rocky
INFO: include disk 'scsi0' 'vmstorage1:vm-140-disk-0' 8G
INFO: include disk 'scsi1' 'vmstorage1:vm-140-disk-1' 2G
INFO: creating vzdump archive '/mnt/pve/backup2/dump/vzdump-qemu-140-2025_12_02-06_44_24.vma.zst'
INFO: starting kvm to execute backup task
INFO: started backup task 'c8a5421f-7313-4bd8-afae-a2d7b260dc10'
INFO: 40% (4.1 GiB of 10.0 GiB) in 3s, read: 1.4 GiB/s, write: 256.4 MiB/s
INFO: 58% (5.9 GiB of 10.0 GiB) in 6s, read: 607.8 MiB/s, write: 253.0 MiB/s
INFO: 74% (7.4 GiB of 10.0 GiB) in 9s, read: 534.6 MiB/s, write: 203.4 MiB/s
INFO: 100% (10.0 GiB of 10.0 GiB) in 12s, read: 875.3 MiB/s, write: 423.8 MiB/s
INFO: backup is sparse: 6.67 GiB (66%) total zero data
INFO: transferred 10.00 GiB in 12 seconds (853.3 MiB/s)
INFO: stopping kvm after backup task
INFO: archive file size: 2.52GB
INFO: adding notes to backup
INFO: Finished Backup of VM 140 (00:00:16)
INFO: Backup finished at 2025-12-02 06:44:40
INFO: Backup job finished successfully
TASK OK

Tasks Cluster log

Start Time ↓	End Time	Node	User name	Description	Status
Dec 02 06:44:24	Dec 02 06:44:40	node101	rjpotter@FS-SSO	VM/CT 140 - Backup	OK
Dec 02 06:41:46	Dec 02 06:43:39	node101	rjpotter@FS-SSO	VM/CT 139 - Backup	OK
Dec 02 06:40:02	Dec 02 06:40:51	node101	rjpotter@FS-SSO	VM/CT 323 - Backup	OK
Dec 02 06:39:01	Dec 02 06:39:07	node101	rjpotter@FS-SSO	VM 323 - Shutdown	OK
Dec 02 06:37:16	Dec 02 06:39:06	node101	rjpotter@FS-SSO	VM/CT 323 - Console	OK

6:44 AM
12/2/2025

ProxMox
Dashboard,
Pool View, All
VMs powered
down

node105 - Proxmox Virtual Envi x + Gemini

itlab.fsemergingtech.com/#v1:0:=%2Fpool%2F2512-CTI1301-rjpottter4::::21::

Virtual Lab Virtual Environment 8.3.2 Search Documentation Create VM Create CT rjpottter@FS-SSO

Pool View

Resource Pool: 2512-CTI1301-rjpottter

Search:

Type	Description	Disk usage...	Memory us...	CPU usage	Uptime	Host CPU ...
qemu	139 (rjpottter-Server2025)				-	
qemu	140 (rjpottter-Rocky)				-	
qemu	323 (rjpottter-Ubuntu)				-	

Tasks Cluster log

Start Time	End Time	Node	User name	Description	Status
Dec 02 06:44:24	Dec 02 06:44:40	node101	rjpottter@FS-SSO	VM/CT 140 - Backup	OK
Dec 02 06:41:46	Dec 02 06:43:39	node101	rjpottter@FS-SSO	VM/CT 139 - Backup	OK
Dec 02 06:40:02	Dec 02 06:40:51	node101	rjpottter@FS-SSO	VM/CT 323 - Backup	OK
Dec 02 06:39:01	Dec 02 06:39:07	node101	rjpottter@FS-SSO	VM 323 - Shutdown	OK
Dec 02 06:37:16	Dec 02 06:39:06	node101	rjpottter@FS-SSO	VM/CT 323 - Console	OK

6:45 AM
12/2/2025